

REMARKS

Claims 11-12 and 14-19 are presently pending in the above-identified patent application. No claim is allowed.

Claims 11, 12, 14, 15, and 17-18 have been rejected pursuant to 35 U.S.C. §103(a) as unpatentably obvious over Hawley, in view of Jain et al. and further in view of Gangopadhyay. Claim 19 has been rejected pursuant to 35 U.S.C. §103(a) as unpatentably obvious over Hawley, in view of Jain et al. and further in view of Gangopadhyay, and further in view of Forouhi.

The examiner has faulted the Hawley Declaration filed July 25, 2008 as allegedly presenting facts that are not germane to the rejection at issue. It is respectfully urged that the examiner is incorrect and the facts presented in the Hawley Declaration are directly relevant to the rejection at issue.

The facts stated in the declaration (which the examiner mistakenly characterizes as relating to “limitations” allegedly missing from the claims) are directly relevant to the rejections at issue. The rejection at issue is an obviousness rejection made pursuant to 35 U.S.C. §103(a). Paragraph 3 of the Declaration explicitly states that it relates to recitation of unexpectedly superior properties possessed by the antifuses fabricated according to the

claims of the present invention. Specifically, paragraph 3 of the Hawley Declaration states:

As I stated in my previous Declaration of record in this application, the use of the particular combination of materials recited in the pending claims results in an antifuse having unexpectedly superior properties that are not inherent in prior-art antifuses. An antifuse formed as recited in the pending claims has significant unobvious and superior properties when compared with the prior-art antifuses. First, such an antifuse is more reliable because it does not switch (i.e. revert back to its unprogrammed state) as do prior-art antifuses such as disclosed in my prior patent. This is a critically important property for use in a product. Second, the antifuse as claimed in the pending claims of the instant application programs using a current of only about 1 mA, as opposed to the prior-art antifuses which require currents on the order of between about 5-25 mA to program. The significantly lower programming current of the antifuse of the present invention enables the design of a smaller product because the programming transistors can be made using smaller geometries. These properties are not inherent in the antifuses disclosed in the prior art.

The statement by the examiner that “the arguments refer only to the system and not to the individual claims of the application” is erroneous, as are the following examiner statements that “there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims” and “the limitations on which applicant relies (the antifuse does not switch, the antifuse uses a current of only about 1mA, the programming voltages are in the range of 5V) are not stated in the claims.

As conclusively established by the Hawley Declaration, the unexpected properties possessed by the claimed antifuses are *inherent* in the claimed structures. It is well-settled law that inherent properties of claimed structures do not need to be recited in claims to

those structures. The Hawley Declaration explicitly states “*the use of the particular combination of materials recited in the pending claims results in an antifuse having unexpectedly superior properties that are not inherent in prior art antifuses.*” Thus it is clear that the Hawley Declaration speaks directly to the existing limitations of the pending claims. Recitation of inherent properties of structures is not required of patent claims.

The Hawley Declaration establishes that the properties recited in the Hawley Declaration are both unexpected and superior to those of the prior art. For example, the property that the antifuse does not switch is unexpected and clearly superior. The property that the antifuse programs using currents of 1mA (the prior art antifuses require 5-25 mA of programming current – five to twenty-five times the programming current of the claimed antifuses) is likewise unexpected and clearly superior. Finally, the programming voltages required are significantly and advantageously lower than required by the prior art.

Since the examiner has failed to deny that these results are unexpected and superior, it is established that such results are unexpected and superior. In the present case, there is not just one, but three separate significant unexpected and superior properties inherent in the claimed antifuses. It is well settled patent law established by Supreme Court precedent that the examiner must consider evidence of unexpected and superior properties possessed by the claimed invention. The examiner has inexplicably failed to do so,

instead mischaracterizing inherent properties of the claimed structures as missing claim limitations that do not need to be addressed.

With respect to the Gangopadhyay reference, the examiner makes two significant legal errors. First, the examiner states “Thus, if the disclosure was enabling enough to obtain a patent, then it was enabling enough for anticipation. While that may be true in the abstract, it is abundantly clear that the disclosure of the Gangopadhyay reference was not enabling enough to obtain a patent since it resulted in structures that were, in reality, failed experiments. There was no way for the examiner of the Gangopadhyay application to know that the application failed to provide an enabling disclosure. Had the examiner of the Gangopadhyay application known the facts presented in the Hawley Declaration, the present examiner cannot seriously contend that the Gangopadhyay patent would have issued, since there is no disclosure concerning how to make a device that will not structurally fail. Such a disclosure is non-enabling as a matter of law.

Second, while the examiner states that “even if a reference discloses an inoperative device, it is prior art for all that it teaches,” the examiner fails to cite the rest of the same body of obviousness law, namely that inoperative references are not likely to be relied upon by persons of ordinary skill in the art. , *e.g.*, *U.S. v. Teletronics, Inc.*, 658 F. Supp. 579, 3 USPQ2d 1571, 1579 (D. Colo 1987) *aff’d in part*, 857 F.2d 778, 8 USPQ2d 1217 (Fed. Cir. 1988): “The fact that this work was a failure makes it highly uncertain that one

of ordinary skill at the time would have seized on the one sentence in that article that defendant emphasizes.” It is similarly highly unlikely that anyone skilled in the art would rely on the one feature of the Gangopadhyay reference that is known to fail.

The MPEP §2143.03 recognizes this important principle. Evidence showing that there is no reasonable expectation of success supports a conclusion of non-obviousness, citing *In re Rinehart* 531 F.2d 1048, 189 USPQ 143 (CCPA 1976). In the present case, the only prior-art reference relied on by the examiner for disclosing the use of amorphous carbon antifuse material is established by the Hawley Declaration to be wholly inoperative. The examiner has not challenged the facts showing the total inoperativeness of the structures disclosed in the Gangopadhyay patent. (According to paragraph 5 of the Hawley Declaration , these devices “cannot be successfully fabricated”). Taking as true the facts set forth in the Hawley Declaration, there can be no expectation of success using the antifuse material disclosed in the Gangopadhyay patent since the devices could not be successfully fabricated due to the lack of adhesion of the very component relied upon by the examiner in the rejection. Once the total failure of the Gangopadhyay device due to poor adhesion is known, there is nothing left of the reference on which a person of ordinary skill in the art can rely.

Applicants believe that the above-identified application is now in condition for allowance and such action is respectfully requested.

If the Examiner has any questions regarding this application or this response, the Examiner is requested to telephone the undersigned at 775-586-9500.

Respectfully submitted,  
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